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CLAIMS

1. A method for producing a 4-nitroimidazole compound represented by general formula (1):

$$0_2N \xrightarrow{NH} X^2 \qquad (1)$$

wherein X^2 represents a chlorine atom or bromine atom, comprising iodinating a 4-nitroimidazole compound represented by general formula (2):

$$\begin{array}{c}
X^1 \\
NH \\
N \\
N
\end{array}$$
(2)

wherein each of X^1 and X^2 represents a chlorine atom or bromine atom,

and then reducing the obtained 5-iodo-4-nitroimidazole compound represented by general formula (3):

wherein X^2 is the same as defined above.

- 2. The production method according to claim 1, wherein an iodinating agent is a halogen molecule, hydriodic acid, or a metal salt of hydriodic acid.
- 3. The production method according to claim 2, wherein the metal salt of hydriodic acid is sodium iodide, potassium iodide, lithium iodide, zinc iodide, magnesium iodide, or aluminum iodide.
- 4. The production method according to claim 3,

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wherein the iodinating agent is used to the compound
(2) at a molar ratio between 1.5 : 1 and 15 : 1, and
the iodinating agent is sodium iodide.

- 5. The production method according to claim 1, wherein the reaction is carried out in the presence of a phase-transfer catalyst.
- 6. The production method according to claim 5, wherein the phase-transfer catalyst is used to the compound (2) at a molar ratio between 0.01: 1 and 1: 1, and the phase-transfer catalyst is a quaternary ammonium salt, phosphonium salt, or pyridinium salt.
- 7. The production method according to claim 1, wherein the reducing agent is a hydrogenation reducing agent, and the reducing agent is used to the compound (3) at a molar ratio between 1: 1 and 10: 1.
- 8. The production method according to claim 1, wherein the reducing agent is a catalytic hydrogenation reducing agent, and the reducing agent is used to the compound (3) at a weight ratio between 0.1% by weight and 40% by weight.
- 9. The production method according to claim 8, wherein the reaction is carried out in the presence of triethylamine, trimethylamine, or N-ethyldisopropylamine.